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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PATEL, ISHWARBHAI B

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 03/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/987,355

Applicant(s)

SPREAFICO, SERGIO

Examiner

Ishwar (I. B.) Patel

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 16, 17 and 19-30 is/are pending in the application.
- 4a) Of the above claim(s) 16 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) = \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election / Restriction***

1. Applicant's election of group I, claims 1-15 and 18, (claims 1-15 and 18 are now cancelled and new claims 19-30 are added), with specie II, directed to figure 2, in Paper filed on February 6, 2003 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Drawings***

2. The drawings are objected to because the figures are improperly cross hatched. All the parts shown in section, and only those parts, must be cross hatched. The cross hatching patterns should be selected from those shown on page 600-114/115 of the MPEP based on the material of the part. See also 37 CFR 1.84(h)(3) and MPEP 608.02.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 19-20, 24 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujikami et al., US Patent 5,932,523, hereafter, Fujikami.

Regarding claim 19, Fujikami discloses a cable comprising at least one layer of tapes of superconducting material circumferentially wound side by side on a support at a prefixed distance so that gaps are circumferentially formed between adjacent tapes, wherein a non-superconducting material is interposed between the adjacent tapes to partially fill the gaps (superconducting tape 71, 71' wound around core member 55 with a gap partially filled by insulating material 70, see figure 5-7, column 6, line 5-55).

Regarding claim 20 and 24, Fujikami further discloses the non-superconducting material is a tape and made of plastic, see figure 7, column 6, line 58-65.

Regarding claim 27, Fujikami further discloses the non-superconducting material wound on the underlying super conducting tape and alternated with the tapes of superconducting material, column 6, line 4-25 and 55-57.

5. Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujikami et al., US Patent 5,932,523, hereafter, Fujikami, as applied to claims 19-20 above.

Regarding claims 21-23, the applicant is claiming the thickness of the non-superconductive material in relation to the thickness of the superconductive tape and the gap between the superconductive material and the non-superconductive material.

However, the crux of the invention of the prior art is to provide the insulation between the adjacent superconductive tape and to avoid the edge to edge connection of superconductive tapes, column 6, line 29-55.

Further, it is inherent to use the non-superconductive tape with such a width and thickness that it will have a uniform top surface with that of the superconductive in order to provide a uniform surface for another taper of superconducting tape without overlapping the adjacent superconductive tapes.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the structure of Fujikami with thickness of the tape as claimed with a width to have gap between the superconductive and adjacent non-super conductive tape in order to provide an insulation between the edges of the superconductive tapes and also an uniform surface for subsequent super conductive tape layers.

Regarding claim 28, Fujikami further discloses the cable for power transmission and for that matter it can be used for any current transmission system.

6. Claims 25, 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujikami et al., US Patent 5,932,523, hereafter, Fujikami, as applied to claims 19-24 above, and further in view of Ando et al., US Patent No. 6,034,588, hereafter, Ando.

Regarding claims 25 and 26, the applicant is claiming the non-conducting material has magnetic characteristics at an operative temperature and made of either copper, or silver, or gold, copper alloy, silver alloy and gold alloy material.

Though, Fujikami does not disclose the non-superconducting material with a magnetic characteristic, as disclosed by Ando, a non-superconductive material with a magnetic characteristic between the superconductive materials is known in the art for improving the quality of critical current value, and further any known material suitable for the specific requirement can be used.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the modified structure of Fujikami with the non-superconducting material with a magnetic characteristic and of the material as claimed, as taught by Ando, in order to have the superconducting cable with improved quality of critical current value.

7. Claims 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujikami et al., US Patent 5,932,523, hereafter, Fujikami, as applied to claims 19-24 above, and further in view of Vulis et al., US Patent 4,184,042.

Regarding claim 29, the applicant is claiming two superconductors, a phase and a return conductor with tapes of superconducting materials. Though, Fujikami does not disclose such cable with phase and return conductor, such structure, as shown by Vulis is known in the art and can be used depending upon specific requirement. Vulis discloses such structure for carrying alternating current in superconducting transmission systems.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the modified structure of Fujikami with a phase and return conductor as taught by Vulis, in order to have desired functionality.

Regarding claim 30, the modified assembly of Fujikami discloses all the features of the claimed invention as applied to claim 19 and 29 above, including a non-conductive material present among at least one of the tapes of superconducting material.

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Aupoix et al., disclose cryogenic cable with two separate superconductive material layers.

Ries disclose superconductor with the tape separated by insulating layer in between.

Snowden discloses an alternating current transmission system.

Teruo discloses a superconductive shielding devices with metal foil sandwiched between the tapes.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar (I. B.) Patel whose telephone number is (703) 305 2617. The examiner can normally be reached on M-F (8:30 - 5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L Talbott can be reached on (703) 305 9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3431 for regular communications and (703) 305 7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

  
KAMAND CUNEO  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

ibp  
March 12, 2003